CSCAPE 2005: NOAA Ship *David Starr Jordan*
Weekly Science Report – Leg 5
13 October 2005, Jim Carretta – Cruise Leader

SCIENCE SUMMARY: 5 October – 12 October 2005

The *David Starr Jordan* departed San Diego for Leg 5 of CSCAPE on the morning of 05 October, in route to Astoria, Oregon. After refueling and attempting a calibration of the EK500, we made our way past the Point Loma sea buoys in late afternoon. We welcomed aboard Kathy Hough (back from AK), Paula Olson, and re-acquainted ourselves with Rich Pagen (who we intend on keeping around this time) and Peter Pyle.

Early in the leg, the marine mammal observers were offered a hypothetical deal-with-the-devil. They could have Beaufort 3 or less the entire leg while only encountering common dolphin or take their chances with Mother Nature and reap a bounty of potential species diversity. Most everyone chose the rough weather and species bonanza (but at least one observer signed on the dotted line…). Since we've had almost exclusively Beaufort 6 (other than our first day of effort), there may be more defections before the leg is done.

Despite the rough weather, we managed to get the small boat in the water. A blue whale mission in Beaufort 4 was successful on the 10th, with photographs, whale poop (!), and a biopsy sample. We've also obtained photographs of numerous humpback and blue whales. The usual cast of characters, common dolphin, Risso's dolphin, Dall's porpoise, and fin whales, has kept us busy in between blue and humpback sightings.

Sightings and Effort Summary for Marine Mammals

Date	Start Stop	Position	Total Distance	Average Beaufort
1 OCT – 4 OCT		IN PORT, SAN DIEGO		
100505	DEPART	MARFAC 0930, CALIBRATE EK-500 IN BAY		
100605	0702	N31:37.15 W118:26.61	70.6 nmi	2.4
	1825	N31:54.23 W119:47.69		
100705	0704	N31:55.26 W119:49.07	43.4 nmi	5.3
	1208	N32:07.19 W120:38.29		
100805		BEAUFORT 6	0.0 nmi	6.0
100905	0720	N33:36.14 W123:35.14	42.9 nmi	5.2
	1350	N34:21.65 W123:19.06		
101005	0904	N34:49.19 W123:10.30	49.9 nmi	4.4
	1836	N35:45.32 W122:52.64		
101105	0717	N35:46.49 W122:52.65	13.0 nmi	5.9
	1134	N36:21.24 W122:41.04		
101205	1421	N37:11.23 W122:39.43	6.2 nmi	3.7
	1659	N37:13.30 W122:55.01		

CODE	SPECIES	Weekly Total	CSCAPE Total
5	Unidentified common dolphin		7
13	striped dolphin		8
16	Long-beaked common dolphin		6
17	Short-beaked common dolphin	6	61
18	Bottlenose dolphin		6
21	Risso's dolphin	2	57
22	Pacific white-sided dolphin		88
27	northern right whale dolphin		26
36	Short-fin pilot whale		1
37	killer whale		10
40	harbor porpoise		77
44	Dall's porpoise	9	158
46	sperm whale		26
49	ziphiid whale		3
51	Mesoplodon sp.		4
61	Cuvier's beaked whale		3
63	Baird's beaked whale		5
69	gray whale		2
70	Balaenoptera sp.	2	32
71	minke whale		
74	fin whale	7	86
75	blue whale	6	56
76	humpback whale	4	373
77	unid. dolphin	1	45
78	unid. small whale		4
79	unid. large whale	1	46
277	unid. medium delphinid		1
377	unid. large delphinid		1
	TOTAL	38	1204

Biopsies (Tim O'Toole, Gary Friedrichsen, Laura Morse)

Species	Weekly	CSCAPE Total
Minke whale		1
Humpback whale		21
Blue whale	1	7
Fin whale		1
Sperm whale		11
Baird's beaked whale		2
Short-beaked common dolphin	11	77
Pacific white-sided dolphin		21
Northern right whale dolphin		6
Striped dolphin		2
Dall's porpoise		3
Killer whale		5
Risso's dolphin		4
Grand Total	**12**	**173**

Photo-Project (Cornelia Oedekoven and Holly Fearnbach**)**

Weekly Summary including 6 through 12 October 2005

Species	Weekly Total
Blue whales:	8
Humpback whales:	7
Fin whales:	2
Short-beaked Common Dolphins:	4*

* schools photographed

We like humpbacks. Yup,we do. They are nice and easy. They are fairly easy to approach with the ship in a Beaufort 6. Humpbacks seem to move slowly through the water around here, generally not faster than 3 – 4 knots. They have short dive times, between 4 to 6 minutes during which they don't really move that far. Therefore, the location of where they will surface next is somewhat predictable and we have time to go over there at slow speed, and line up ship and cameras to get the desired fluke picture (I think even the ship's engines are thankful for not having to switch between steerage and full speed in a matter of minutes). On top of that, sometimes they just roll around at the surface – lollygagging – and might even playfully lift their tails up allowing us to get their id-picture.


Humpback whale calf lifting its tail playfully providing great photo opportunity (photo: Cornelia Oedekoven)

Blue whales, on the other hand, are a bit more of a challenge in these weather conditions (not that we don't like challenges, no we really do…). They usually move a bit faster - around 6 to 8 knots seems to be their slow to moderate speeds around here. They dive longer, on average about 10 minutes, with a wide span of variation. Sometimes you really don't have a clue where they will pop up next – they might even decide to change direction while they are subsurface. With swells of 8 to 10 feet the whale preferably needs to be in the birder's zone (300 m from the ship) or closer. Otherwise, it might disappear behind the swell entirely at the critical moment when the whale high arches during its terminal surfacing, finally revealing its dorsal fin, cameras in focus, fingers pressing down on the trigger,… oops, oh well, gone behind the swell. Then it becomes a lot easier (and more comfortable – especially from the perspective of somewhat wind-sheltered flying bridge) to send the little boat people out to do the job. And this we did on 10 Oct during a blue whale sighting. Within a total of four whales, there was one pair that remained in the same area surfacing about every five minutes (very "cooperative" whales!). Much to the entertainment for the people on the flying bridge (I have to admit), the small boat kept disappearing underneath their own big splashes and spray they created while headed into the swell. It became obvious that this was not one of the easier missions for the small boat and its occupants (Jim, you did a great job putting that small boat rotation together!). But our die-hards came back with success – id-pictures and biopsy – and sponge-like mustang suits (hee-hee).

As the reader might be able to tell, as we head north, our photographic focus is more and more on the large whales and less on the dolphins. We did encounter a few schools of short-beaked

common dolphins (4 schools photographed) while we were still in the more southern parts of our study area. And we are expecting the Pacific white-sided dolphins and Northern right-whale dolphins to come in any minute now.

Seabird Report (Rich Pagen and Peter Pyle)

It was beginning to feel like the movie, "Groundhog Day": every morning a NW swell and lumpy sea, over and over again. But instead of "I've got you babe" playing over and over as we started morning effort, all we could hear was the wind in the rigging. Quiet most of the week, with Leach's Storm-Petrel occasionally keeping us company in the outer regions of the study area, a few times joined by Cook's Petrel, Red-billed Tropicbird, or a passing jaeger. It was a good time and place for off-course land birds. The wind seemed to have kept most on shore, except for our first day. With light Santa Ana winds, Jim popped a probable Blackburnian Warbler and we were visited by three butterfly species 80 miles off San Clemente Island. On Tuesday, we crossed back into greener water (pastures?) on the shelf and were greeted by Ashy Storm-Petrel, Pink-footed Shearwater, an assortment of alcids and gulls, a pipit, and a meadowlark.

Oceanographic Operations (Candice Hall & Liz Zele)

After an exciting San Diego in port, we departed amidst barmy water temperatures of 18.5 ºC (65ºF) and salinities of 33.36 psu, escorted by trumpet-blowing mermaids and mermen… oops, wrong story☺. Seriously, while working on the CTD, Liz and I did get up close and personal with a nuclear, Los Angeles Class Submarine!! Apart from being too nervous to take a photo, it was sadly the highlight of our departure day.

What were worthy of photographs were our intermittent oceanic bongo companions, as depicted in figure 1. This specimen actually committed hara-kiri and launched himself onto the aft deck (the aquatic version of a sword??). I guess life had become too much for the poor critter…

Figure 1: Loligo sp. (Photo: Cornelia Oedekoven)

The end of this week has certainly put paid to any 'swim call' requests, with coastal water temperatures dropping to 12.04 ºC (53.6 ºF) yesterday. With the last few XBT's showing

minimal or absolutely no mixed layer below the surface layer, we were definitely in the grips of the coastal upwelling zone. Our sympathy goes out to the mammal observers, with the icy wind – it is very cold on the Flying Bridge (oddly enough neither of us have been up there to personally check lately, their warm weather gear is enough of a deterrent!).

Date	CTD's	XBT's	Bongo Tows	Comments
10/05	0	0	0	Departure from San Diego, no operations due to passage through Mexican waters
10/06	1	3	1	
10/07	1	3	1	
10/08	0	3	0	Weather-reduced operations
10/09	1	3	1	
10/10	1	3	1	
10/11	1	3	1	Shallow bongo
10/12	1	3	1	Pioneer Canyon Bongo

Happily, we have only had to cancel one CTD and one Bongo due to the weather (not much question with winds over 32 knots). Even the Bridge has expressed admiration for our ability to safely launch and retrieve the Bongo in high winds. However, as our ~~infamous~~ famous Leg 5 Cruise Leader, Jim says, and I quote: 'Safety first, then food, then friends… maybe'. Um, help!! As I write we are sailing over the Pioneer Canyon, which, would you believe, is right next to the Pioneer Seamount. We're hoping for notable thermosalinity traces, as well as hefty bongo samples.

Our quote for the week: 'Life offers infinite possible roads. Sometimes your head chooses the route, sometimes your heart. And sometimes, for better or worse, neither head nor heart can resist the stubborn pull of fate' (Dean Koontz – False Memory, 1999).

Squeakly Report (Liz Zele and Laura Morse)

Despite the observers' weather obstructions this week, they have successfully managed to detect, several groups of blue whales. This works out well for acoustics as it FINALLY gives us something to do!

After several uneventful acoustic sessions with sonobuoys transmitting nothing more distinct than our ship's engine, we finally had a little excitement with some up and down sweeps around 500-650 Hz. While not exactly sure of the origination of these calls (though fairly certain they weren't from our blues that were practically lounging atop the buoy), their presence added a little glimmer to the previous incessant void. With a new pallet of (hopefully more successful) buoys and infinite patience, we hope to listen for many an hour this coming week!